

IMAGES OF WAR HITLER'S LIGHT TANKS

RARE PHOTOGRAPHS FROM WARTIME ARCHIVES



PAUL THOMAS

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Paul Thomas



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Contents

Introduction	4
Chapter One	
Blitzkrieg, 1939–40	5
Chapter Two	
The Balkans and the Eastern Front, 1941	43
Chapter Three	
Battles in Russia, 1942–43	71
Chapter Four	
Last Years, 1943–45	107
Appendix	
Panzer Variants	120

Introduction

From the early successful operations of the Blitzkrieg campaigns between 1939 and 1940 in Poland and on the Western Front, to the mid-war battles in Russia in 1942–43, *Hitler's Light Tanks* is a well documented and superbly illustrated record of German light tanks. Using rare and unpublished photographs, it represents an excellent visual account of the various light tank units of the Wehrmacht, initially equipped with the Panzer I, II, 35(t), 38(t) and its variants.

With detailed captions and text the book tells the story of how the light tank was adapted to survive on the battlefield against the ever-increasing threat of larger and more powerful Russian armoured vehicles. It reveals how the Panzer I, II, 35(t), 38(t) during its mid-war period were produced with a wide variety of self-propelled mounts. These included the 2cm FlaK and KwK 7.62cm and 7.5cm PaK and 15cm guns on variations that included a revised mid-engine hull. From this small armoured command vehicle the Germans built their first tracked tank killers, or Panzerjäger.

As the threat in Russia intensified a number of the Panzer 38(t)s were modified and this book shows them converted into the Marder III Panzerjäger (tank destroyer); with the German 7.5cm gun in open-top superstructure; the Marder III (SdKfz.139) German tank destroyer; the Soviet 76.2cm gun in open-top superstructure; the SdKfz.138/1 Grille German self-propelled gun; the German 15cm heavy infantry gun; and the Munitionspanzer 38(t) (Sf) Ausf. K (Sd.Kfz.138/1) ammunition carrier variant, which carried ammunition for the SP gun. There was the Flakpanzer 38(t) German self-propelled anti-aircraft gun; the 20mm FlaK 38 anti-aircraft gun; the SdKfz.140/1 Aufklärungspanzer 38(t) mit 2cm KwK 38 reconnaissance tank with 20mm turret from an Sd.Kfz.222 armoured car; and the Sd.Kfz.140/1 Aufklärungspanzer 38(t) mit 7.5cm KwK 37 L/24 close-support reconnaissance tank with 7.5cm gun mounted in a modified superstructure. All of these vehicles fought extensively on the eastern front in a desperate attempt by the Panzerwaffe to survive.

This book shows that although the light tank was relatively successful on the battlefield, their size and thin armour often limited their effectiveness. The light tanks were constantly required to support troops on the battlefield, as well as fighting offensive and defensive missions. As a result many paid a high price, but in spite of the losses, these light tanks and their modified variants fought on until the last days of the war.

Chapter One

Blitzkrieg 1939-40

As the war clouds gathered over Europe and Hitler's vast army was poised to attack, his Panzerwaffe (comprising over 2,700 Panzers) formed up along the borders of Poland ready to strike. Only 60 per cent of Germany's armoured force were committed to operations against Poland due to maintenance issues. Most of the Panzers used were known as light tanks. These comprised mainly the Panzerkampfwagen I, the Pz.Kpfw.II, and the Czech-built Pz.Kpfw.35(t) and Pz.Kpfw.38(t).

Hitler had envisaged a fast moving armoured army of tanks that would spread fire and devastation like the world had never seen before. Against Poland, his light tanks would play the main part in his grand strategy, using Blitzkrieg tactics for the first time.

On 1 September 1939, Hitler's light tanks were unleashed against the Polish army. The Pz.Kpfw.I, which was the main light battle tank at this time, gave a promising introduction to what the Germans could achieve in tank design, and in Poland it would be used extensively. The tank featured a crew of two, a driver and a commander, the latter also used as the gunner. The driver sat in the forward hull of the cramped vehicle on the left, while the commander occupied the turret to the right. The tank was armed with two 7.92mm machine guns, both capable of firing 650 rounds per minute. They fired simultaneously or individually, and could only be traversed manually by the commander. Entry and exit for the commander was through the small turret roof, while the driver could exit or enter the vehicle by a hinged rectangular door on the left of the superstructure. The tank featured five road wheels to a track side, each wheel encased in rubber, and three rollers, which were fitted to the underside of the upper track run. The tank had minimal armoured protection.

Another revolutionary light tank built for the German war machine was the Pz.Kpfw.II. Its design was based on the Pz.Kpfw.I but was larger and had a turret mounting a 2cm anti-tank gun. All production variants of the Pz.Kpfw.II were fitted with the 140PS, gasoline-fuelled six-cylinder Maybach HL62 TRM engine and ZF transmissions. The Ausf. A, B and C variants had a top speed of 25mph, while the Ausf. D and E had a torsion bar suspension and a much superior transmission, giving a

top road speed of 33mph. However, across country where this vehicle would be used mainly, it had a much lower speed than previous models. Consequently, the Ausf. F variant was replaced with the old leaf-spring type suspension making it much faster. The Pz.Kpfw.II had a three-man crew. The driver sat in the forward hull, the commander sat in a turret seat and was also the gunner. The radio operator was positioned on the floor of the tank under the turret.

Another light tank to make its debut on the battlefields of Poland was the Czechoslovak-manufactured Pz.Kpfw.38(t). It was an excellently designed vehicle, especially compared to the Pz.Kpfw.I and Pz.Kpfw.II, the Panzerwaffe's main tanks. This riveted armoured, rear-engine tank had a two-man turret which was centrally located and housed the tank's main armament, a 3.7cm Škoda A7 gun, with ninety rounds stored on board. It was equipped with a 7.92mm machine gun to the right of the main ordnance. This turret machine gun was in a separate ball mount rather than a fixed coaxial mount. The driver was situated in the front right of the hull, with the bow machine-gunner seated to the left manning the 7.92mm machine gun. The bow gunner also doubled as the radio operator. The radio was mounted on the left of the bow gunner. The engine was mounted in the rear of the hull and drove the tank through a transmission with five forward gears and one reverse gear to forward drive sprockets. The track ran under four rubber-tyred road wheels and back over a rear idler with two track return rollers. The wheels were mounted on a leaf-spring double-bogie mounted on two axles.

The other Czech-designed tank which was used as a light tank in Poland was the Pz.Kpfw.35(t). The tank had a four man crew: the driver sat on the right side of the tank using an observation port; the radio operator sat on the left with his own observation port. His radios were mounted on the left wall of the hull. The hull machine gun was between the driver and radio operator in a ball mount. Most of the machine gun's barrel protruded from the mount and was protected by an armoured trough. In the turret sat the commander, who was responsible for loading, aiming and firing the main gun and the turret machine gun, while at the same time commanding the tank.

Operations in Poland lasted for just five weeks and during that period Blitzkrieg tactics were used as predicted with devastating results on the Polish army. Hitler's light tanks were tried and tested, but not without fault. Out in the field the tanks were wrought with mechanical breakdowns and vulnerable to Polish anti-tank gunners. A total of 341 light tanks were lost on the battlefield, and it was the thin armoured and lightly armed Pz.Kpfw.I which took the brunt.

Tactics also played a major part in the high tank losses. Commanders in the field were often reluctant to send in their light tanks as the main striking arm. Instead some units were ordered to cover an infantry advance often, on the flanks. This led to higher than normal losses, as the slow moving pace of the tanks that were supporting

the infantry immediately became susceptible to anti-tank fire and close-quarter infantry attacks.

Following the successful conclusion of the invasion of Poland, tank production was immediately increased to 125 tanks a month. However, due to the high losses in the Polish campaign, German tank manufacturers were forced to draw on Czech tank designs and reluctantly build more light tanks which were quicker and cheaper to construct. As a consequence, light tanks in 1940 continued to form the majority of the Panzerwaffe's armoured strength.

In light of the high tank losses sustained in Poland, tank commanders were resolute to change armoured tactics and not to support and cover infantry where it was not entirely necessary. Designers began proposing that some of the Pz.Kpfw.IIs should be converted into Panzerjäger or tank hunters which would support the infantry. A sIG 33 infantry gun was therefore mounted on the chassis of the Pz.Kpfw.I Ausf. B variant, complete with carriage and wheels, in place of the turret and superstructure. A thick, tall, open-topped fighting compartment on the forward part of the hull was bolted in place. This was known as the 15cm sIG 33 (Sf) auf Panzerkampfwagen I Ausf. B, or better known as the Sturmpanzer I or Bison. Thirty-six of these artillery vehicles were organized into independent Schwere Infanteriegeschütz-Kompanie (self-propelled heavy infantry gun companies) and were assigned to the Panzer divisions that would take part in German army's next campaign, which would be against France in 1940.

Alongside these self-propelled heavy infantry guns, a new tank hunter or Panzerjäger made its debut at the same time. As with the sIG 33 howitzer the Germans knew that their 3.7cm PaK 35/36 anti-tank gun was beyond the capabilities of some of the French tanks like the Char B1. Consequently, the first anti-tank destroyer to see action was introduced on to the battlefield. The vehicle mounted a Czech Škoda 4.7cm (1.9in) PaK(t) anti-tank gun (4.7cm PaK(t) (Sf) auf Panzerkampfwagen I ohne Turm) which was on a converted Ausf. B chassis anti-tank gun and served to extend the life of the obsolete Panzer I tank chassis. Even by 1940 it was realised that the Pz.Kpfw.I was obsolete as a battle tank, and during 1940 these tanks were slowly converted to what were known as a Panzerjäger I.

On the battlefield the Panzerjäger I was generally organized into nine-vehicle companies, with three companies per battalion. During the French campaign, anti-tank battalion Panzerjäger-Abteilung 521 had only six vehicles per company, but was also used by independent anti-tank battalions. In total five Panzerjäger companies were equipped with a 4.7cm PaK auf Pz.Kpfw.I. In France this vehicle provided ample mobile anti-tank support for the infantry divisions. Throughout the western campaign the Panzerjäger fought with distinction and supported the infantry extensively.

Moving in front of these Panzerjäger on the western front in 1940 were the light tanks, comprising 640 Pz.Kpfw.Is, 825 Pz.Kpfw.IIs, 151 Pz.Kpfw.35(t) and 264 Pz.Kpfw.38(t). The reserves comprised some 160 vehicles to replace combat losses and 135 Pz.Kpfw.Is and Pz.Kpfw.IIs which had been converted into armoured command tanks, which resulted in them losing their armament.

As with Poland, the battle of the Low Countries and then France ended by June 1940 with victories for the Germans. France proved ideal tank country for a lightening war, and its conception seemed flawless. To many tacticians, Blitzkrieg would ensure future victories. The Panzer was the key to this success, but the light tank that had dominated the battlefield up to now would increasingly be up against heavier armour.



A dark photograph taken during a training exercise just before the invasion of Poland in the summer of 1939. A Pz.Kpfw.II Ausf. A or Ausf. B follows a Pz.Kpfw.I Ausf. A through a forest. Note the three digital tactical numbers painted in white on the turrets of both light tanks. These numbers identify the tanks as belonging to a Panzer-Abteilung 1. Company.



Another photograph during a pre-war exercise showing a group of troops next to two Pz.Kpfw.I Ausf. As. The tank was armed with two 7.92mm machine guns, both of which were capable of firing 650 rounds per minute, either simultaneously or individually. They could only be traversed by the commander by hand. Entry and exit for the commander was through the small turret roof, while the driver could exit or enter the vehicle by a hinged rectangular door on the left of the superstructure. The tank had minimal armoured protection and featured five road wheels to a track side, each wheel encased in rubber. Three rollers were fitted to the underside of the upper track run.

A pair of Pz.Kpfw.I Ausf. As on pre-war manoeuvres. Both tanks lack markings. Of particular interest, the front and rear hinged mud flaps have been removed, probably to prevent a build-up of debris.





(Above) An excellent view of Pz.Kpfw.I crewmen wearing the standard black Panzer uniform with black beret during a pre-war exercise. Note that the tank's machine gun, the MG 13k, is mounted, but covered against the elements.

(Opposite, above) A column of Pz.Kpfw.I Ausf. Bs advancing along a dirt road on an exercise. No markings can be seen on these dusty Panzers. This photograph was taken in July 1939, weeks before the invasion of Poland.

(Opposite, below) Here a Pz.Kpfw.I can be seen in the snow. It shows evidence of pre-war three tone camouflage scheme on the turret side and superstructure plates. Typically for exercises, the twin MG 13k armament has not been fitted.







(Opposite, above) During the invasion of Poland in September 1939, this photograph depicts the crew on the cupola of a Pz.Kpfw.35(t). This Czech-design tank was used as a German light tank following the occupation of Czechoslovakia. It was known initially as the Lehký tank vzor 35 (light tank model 35) and was designated by the Germans as the Pz.Kpfw.35(t). A total of 434 were built; of these the Germans seized 244 when the Germans occupied Bohemia-Moravia in March 1939.

(Opposite, below) The commander of this fast moving Pz.Kpfw.II Ausf. A, B or C can be seen waving to the cameraman as he passes through a decimated Polish town in September 1939. This revolutionary light tank was based on the Pz.Kpfw.I but was larger and with a turret mounting a 2cm anti-tank gun. Production began in 1935 and it was not combat ready until 1936. All production variants of the Pz.Kpfw.II were fitted with the 140PS, gasoline-fuelled six-cylinder Mayback HL 62 TRM engine and ZF transmissions. The Ausf. A, B and C variants had a top speed of 25mph, while the Ausf. D and E had a torsion bar suspension and a superior transmission giving a top road speed of 33mph. However, across country it had a lower speed than previous models. Consequently, the Ausf. F variant's suspension was replaced with the old leaf spring type, which solved the problem.

(Above) An interesting photograph showing a Pz.Kpfw.II Ausf. A, B or C passing a stationary anti-tank gunner with his 3.7cm PaK 35/36. The Pz.Kpfw.II had a three-man crew. The driver sat in the forward hull, the commander sat in a turret seat and was also the gunner, the radio operator was positioned on the floor of the tank under the turret.





(Opposite, above) A good close-up view of the commander inside the turret of a Pz.Kpfw.I Ausf. A. The Panzer I Ausf. A variant featured a crew of two, a driver and a commander; the latter was also used as the gunner. The driver sat in the forward hull of the cramped vehicle on the left, while the commander occupied the turret to the right.

(Opposite, below) During operations in Poland, this image depicts command from a Panzer division. The Panzer on the right is the Kfz.22 with a thick white national cross painted on all four armoured surfaces of the superstructure, which was characteristic of this campaign, especially during the first two weeks of the war. The staff car fitted with radios is a Kfz.22.

(Above) A Pz.Kpfw.II advancing along a road. In 1939/40 the Pz.Kpfw.I and II represented the substantial majority of the Panzers. During this period the Pz.Kpfw.II continued to receive modifications. Throughout the Polish campaign 223 were distributed among the armoured formations.



(Above) A Pz.Kpfw.I passes through a Polish town during operations in September 1939. In the Polish campaign the Pz.Kpfw.I was the main Panzer of the German Army with some 1,445 in service. By the end of the campaign only eighty-nine had been knocked out of action.

(Opposite, above) Photographed from a Pz.Kpfw.II showing advancing armour obscured partly by the tank's MG 34 machine gun. Across the field are two Pz.Kpfw.IIs, one displaying the white painted cross on the turret side; the other appears to be a Pz.Kpfw.III. Note that the light tanks are supporting advancing infantry.

(Opposite, below) A Pz.Kpfw.I Ausf. A seen crossing a field during an operation in 1939. The driver controlled the direction of the tank by means of steering levers, each of which had two handgrips, one for normal steering and the other with a thumb-plunger to act as a parking brake.







(Opposite, above) An unidentified Pz.Kpfw.I along a mud road inside a village in 1939. This vehicle carries no markings and has been painted with the standard camouflage of dark grey with dark green patches over the whole vehicle.

(Opposite, below) A Pz.Kpfw.II in undergrowth. It has no visible markings except a small tactical number '211' painted on its side armour. Its 2cm cannon was fired from a trigger on the elevating hand wheel to his right. Inside the fighting compartment there were 18 magazines containing 180 rounds for the cannon.

(Above) A Pz.Kpfw.38(t) leads the advance through a village followed by a Pz.Kpfw.II Ausf. C, Pz.Kpfw.IV and a Pz.Kpfw.38(t). The Pz.Kpfw.38(t) was widely used in the Panzer divisions during the early war period. The tank had a two-man turret which was centrally located and housed the tank's main armament, a 3.7cm Škoda A7 gun with ninety rounds stored on board. It was equipped with a 7.92mm machine gun to the right of the main ordnance. This turret machine gun was in a separate ball mount rather than a fixed coaxial mount. The driver was situated in the front right of the hull, with the bow machine-gunner seated to the left manning the 7.92mm machine gun. The bow gunner also doubled as the radio operator. The radio was mounted on the left of the bow gunner. The engine was mounted in the rear of the hull and drove the tank through a transmission with five forward gears and one reverse gear to forward drive sprockets. The track ran under four rubber-tyred road wheels and back over a rear idler and two track return rollers. The wheels were mounted on a leaf-spring double-bogie mounted on two axles.



(Above) A Pz.Kpfw.I advancing through a field. The operating weight of this tank was listed at 5.9 tons and power came from a single Krupp M 305 air-cooled, four-cylinder, petrol engine delivering up to 60bhp. The Ausf. A could manage a top road speed of 23mph, with a range of 85 miles cross-country and 125 miles on road.

(Opposite, above) During the Polish campaign soldiers are seen standing in front of a stationary Pz.Kpfw.35(t). The driver sat on the right side of the tank using an observation port; the radio operator sat on the left with his own observation port. His radios were mounted on the left wall of the hull. The hull machine gun was between the driver and radio operator in a ball mount. Most of the machine gun's barrel protruded from the mount and was protected by an armoured trough. In the turret sat the commander, responsible for loading, aiming and firing the main gun and the turret machine gun, while at the same time commanding the tank.

(Opposite, below) A crewman poses for the camera with a salvaged Pz.Kpfw.35(t), which has clearly been knocked out of action by a Polish anti-tank gunner and then retrieved.







(**Opposite, above**) After the capture of Warsaw in late September 1939 a Pz.Kpfw.35(t) rolls along a city street in full view of a curious group of Polish civilians lining the side of the road. This vehicle was part of Panzer Regiment 35 of the 4th Panzer Division.

(**Opposite, below**) A column of Pz.Kpfw.IIs roll through a town watched from the roadside by a group of Jewish people. Unbeknownst to them, their fate is sealed.

(**Above**) Following the defeat of Poland in early October 1939 Hitler held a victory parade through Warsaw. Pictured taking the salute on his podium, the Führer can be seen here watching a line of Pz.Kpfw.IIs drive past. Their white cross for ground and aerial recognition can be seen on the side of the turret.



Following the defeat of Poland, crewman can be seen unloading their Pz.Kpfw.Is off a special flatbed railway car. During the war Panzer divisions would extensively use the railways to transport their armour quickly from one part of the front to another.

A column of Pz.Kpfw.Is advance along a road in Poland in 1939. This vehicle was never actually intended to be used in combat. But it was relatively inexpensive and easily produced, and did provide the German army with good support in Poland.





During the early winter of 1939 following the defeat of Poland, these crewman can be seen in a snowy field with their armour. In the background a stationary Pz.Kpfw.II can be seen still painted in its factory grey and retaining the white cross painted on the side turret.

In the winter of 1939 this Pz.Kpfw.I on manoeuvres is towing an early production 1.Serie/La.S. These turretless tracked vehicles were used to train tank crews and were known as the Umbau-Fahrzeuge. Technically the vehicle was a Pz.Kpfw.I without a turret and extended modifications. The next generation the 2.Serie/La.S became the Pz.Kpfw.I Ausf. A.





(**Above**) Photographed in the early winter of 1940, the crew of a Pz.Kpfw.I Ausf. A pose for the camera in the snow. Note the new style national cross insignia painted on the side of the armoured plates.

(**Opposite, above**) Just before the invasion of the Low Countries, these Pz.Kpfw.I Ausf. Bs, with a pair of Pz.Kpfw.IIs, halt in a field. All these tanks are marked with large white outline national cross insignia on both sides and the rear of their turrets.

(**Opposite, below**) The photographer for some reason is sheltering at the side of the road. He has taken a photograph of a column of wheeled vehicles which is led by a Pz.Kpfw.I Ausf. A. It has no markings. Note the front and rear mud-flaps have been removed from the track guards.





During operations in France and two Pz.Kpfw.IIs can be seen advancing across a field with some of the crew onboard. As with the smaller Pz.Kpfw.I, this light Panzer was originally designed as a stopgap while larger, more advanced tanks were being developed. In spite of this, the Pz.Kpfw.II played a prominent role in the Polish and the French campaigns.

A Pz.Kpfw.II Ausf. A, B or C during operations in France moving at speed through a town. Note the spaced armour on the bow and the appliqué armour on the turret and superstructure front.





Out in the field during an operation in France in late May 1940 is a Pz.Kpfw.II Ausf. B.

During the battle of France in May 1940, a halftrack Sd.Kfz.9 is towing a Pz.Kpfw.38(t) Ausf. B, C or D on a Sd.Ah.115 tank transport trailer across a pontoon bridge. Note the tactical number '215' painted in yellow with a white outline on the turret side.





A Pz.Kpfw.35(t) in a field. The registration number 13846 is painted in white on the low bow plate. The tank is armed with 3.7cm KwK(t) and 7.92mm MG 37(t) machine guns for local defence. Note the three-colour camouflage scheme of green and brown applied over the yellow sand base.

A column of Panzers in the field. Leading the column is a Pz.Kpfw.35(t). Behind this vehicle are two Pz.Kpfw.IVs and further behind appear to be Pz.Kpfw.IIs and other armoured vehicles.





A typical attacking formation across a field during the French campaign and Pz.Kpfw.38(t)s are supporting troops as they advance. This tank, though relatively successful in France, was unable to effectively engage the frontal armour of medium or heavy tanks.

Two stationary Pz.Kpfw.IIs on a road in 1940. Two infantrymen have evidently hitched a lift onboard one of the vehicles. Other soldiers can be seen on foot next to the Panzer. Note the track links on the rear of the other tank.





(Above) A Pz.Kpfw.38(t) Ausf. B, C or D makes its way out of its hull-down position during the early part of the French campaign. Note the large tactical number 134 on the turret side. The new black and white national cross can be seen painted on the track guard stowage locker.

(Opposite, above) A column of Pz.Kpfw.IIs roll along a dusty road bound for the front lines. During the French campaign the flat terrain increased the effectiveness of the light Panzer where it could advance quickly over great distances.

(Opposite, below) Two Pz.Kpfw.I Ausf. As lead a truck through a town that's seen some extensive fighting. The near tank shows a thick layer of dust covering large parts of its grey painted armour. Of interest, the second Panzer has no MG 13ks fitted, although they are actually fighting.







(Opposite, above) A column of Pz.Kpfw.38(t) Ausf. B, C or Ds on the advance through a French town in 1940. Note the commander in the leading tank wearing the waterproof camouflage rain cape, *Zeltbahn*.

(Opposite, below) A Pz.Kpfw.II from the 8th Panzer Brigade of the 5th Panzer Division advances along a road in 1940. This Panzer carries the divisional insignia of an inverted 'Y' with a single dot painted in yellow on the superstructure sides and on the driver's plate. It carries the tactical number 212 on the rhomboid plates painted in yellow.

(Above) A Pz.Kpfw.II negotiates a blitzed town during operations in June 1940. During the French campaign there was close cooperation between the infantry due to the size of the Pz.Kpfw.II. This became an important element of Blitzkrieg tactics.





(Opposite, above) A column of Pz.Kpfw.II command tanks negotiate a town. The Panzers are painted in a dark grey or the two-tone system of dark grey over the sprayed dark brown in patches, which covered approximately one third of it.

(Opposite, below) A propaganda photo showing a side close-up view of a Pz.Kpfw.38(t). Its large tactical number 114 is painted on the side of the turret in red with a white outline.

(Above) A column of Pz.Kpfw.38(t)s roll along a road. The leading vehicle can be seen with a mounted antenna. The standard version of this tank was fitted with an Fu.2 radio receiver; it could not transmit. The platoon command tanks were fitted with an Fu.5 transmitter and receiver set, while company command vehicles mounted an Fu.2 and Fu.5.



Two crew members pose in front of their Panzerjäger I on a road. These vehicles were the first fully-tracked self-propelled anti-tank guns in German service and were created by mounting a well-designed ex-Czech 4.7cm PaK(t) on a modified Pz.Kpfw.I Ausf. B chassis. The formal name of the equipment on these vehicles was 4.7cm PaK(t) (Sf) auf Panzerkampfwagen I ohne Turm (4.7cm anti-tank gun (Czech) on turretless Pz.Kpfw.I).

A Pz.Kpfw.II advances along a dirt road on operational duties. Track links have been bolted to the front of the vehicle to reinforce the tank's armour against shell fire.





A Pz.Kpfw.II with crew outside at a maintenance workshop in 1940. After combat experience in Poland an additional 20mm appliqué armour plate was bolted to the turret and superstructure, while spaced armour was fitted over the hull front.

A knocked-out Pz.Kpfw.38(t) during operations in France in May or June 1940. The track of this vehicle has been blown half off and put out of action. By the look of the armour, fire damage has rendered this vehicle unsalvageable.







(Opposite, above) An unidentified Pz.Kpfw.II advances along a French road in June 1940 and passes a stationary BMW motorcycle.

(Opposite, below) Newly arrived Pz.Kpfw.IIs that have come off the production line and made battle ready. Here they are lined up in a field with other vehicles, mainly support trucks.

(Above) An interesting photograph showing two Pz.Kpfw.35(t)s resting on a roadside. Note the white letter G on the windshield of the near car, which denotes the vehicle belongs to Guderian's Panzer group. The only unit operating the Pz.Kpfw.35(t) in 1940 was the 6th Panzer Division.



Inside a captured French town, a number of armoured vehicles can be seen including two Pz.Kpfw.IIs. Note behind them is an Sd.Kfz.251/3 armoured radio vehicle which was fitted with extra radio equipment for command use in Ausf. C and Ausf. D versions. These halftracks were assigned to HQ and Panzer units.

Panzer crewmen pose with their halted Pz.Kpfw.II Ausf. C. Of particular interest, this vehicle appears to have been modified with spaced armour on the bow and appliqué armour on the turret and superstructure front.



Chapter Two

The Balkans and the Eastern Front 1941

Panzer I, II, 35(t), 38(t) and its variants

Following the defeat of France in June 1940, Germany increased its production of tanks and its variants. Ten months later, on 6 April 1941, the invasion of Yugoslavia (also known as Operation 25) was mobilized. For this operation, ten armoured divisions had been prepared for combat as well as several motorized units. The bulk of the light tanks that were deployed for action were the Pz.Kpfw.I, II, 35(t) and 38(t), plus the Panzerjäger companies with their open-topped superstructures comprising mainly the Sturmpanzer I.

Though the Balkan operation was a resounding success, Panzer crews found that the Balkan mountains were often difficult to negotiate. Panzers found themselves negotiating difficult roads which put great strain on their engines and many Pz.Kpfw.IIs broke down. Despite this, the light tanks in the Balkans produced good results against their lightly armed enemy.

Following operations in the Balkans, the armoured divisions were transferred along the frontier of the Soviet Union to prepare for an attack. For the invasion of Russia, the Panzerwaffe's light armour consisted of 410 Pz.Kpfw.IIs, 746 Pz.Kpfw.IIs, 149 Pz.Kpfw.35(t)s, and 623 Pz.Kpfw.38(t)s. Once again, this force had to rely on obsolete light tanks to provide the armoured punch, although for added punch the Panzer divisions were slightly modified in firepower.

They had in fact been diluted in strength in order to form more divisions. The planners thought that by concentrating a number of Panzer divisions together they were able to achieve local superiority. However, the light tank, which in 1941 was the core of the Panzer divisions, would find operations in Russia demanding. The great distances in which the vehicles had to travel, and the defensive firepower of the enemy would see high losses. In spite of the initial success of the Panzerwaffe between June and September 1941, commanders in the field were shocked to find that their light tanks were inferior to the newer Soviet tank models of the T-34 and

KV series. In Army Group North they quickly realised that none of its light tank guns currently in use could penetrate the thick frontal armour of the KV-1. Instead the light tanks had to rely on the anti-tank gunners, which were often trailing in the rear and had to be brought up to deal with the Soviet armour. In some units they were fortunate to be supported by the Panzerjäger I, which during the initial phase of the invasion of Russia had seen a degree of success against lighter Soviet tanks. Although initially the Panzerjäger were basically anti-tank guns on tracks, they ultimately became the backbone of support for the light tanks. In Russia, anti-tank battalions were formed and equipped with 135 Panzerjäger Is. These vehicles had limited armour, so crews often remained hidden, and then attacked at the last moment. Being an open-topped vehicle meant that visibility for them was very good, and they often could identify a target before the enemy saw them. The vehicle had a good fire rate and shell penetration. Even so, it soon became apparent that the gun was no match for the T-34.

In spite of the inadequacies of the lightly armed Panzers, the German war machine progressed well against the Red Army and scored considerable success on all fronts. Losses in light armour were high, but the heavier tanks such as the Pz.Kpfw.III and IV made up for this. By late summer of 1941 it was apparent that the Germans knew they needed more powerful anti-tank guns that were mobile. In the field they possessed the punchy 7.5cm PaK 40, and also had a large number of captured Soviet 76mm F-22 Model 1936 divisional field guns. Already the Germans were operating the adapted Panzerjäger I to provide mobility to a heavier gun against enemy tanks. They came up with an interim solution to deal with the urgent threat of being overrun by the T-34s and KV-1s. It was decided to adapt the Pz.Kpfw.II and 38(t) as the basis for makeshift tank destroyers. The result was the Marder, series I, II, and III. These vehicles provided mobility to either the captured Soviet 7.62cm PaK 36(r) gun or in later versions the German 7.5cm PaK 40 anti-tank gun. The success at stabilizing the front owed much to these vehicles during the early phase of the war in the east.

Back in Germany production of tanks and the conversion of tanks into tank-hunters sped up. To overcome the mammoth task of defeating the Red Army more Panzer divisions were being raised, and motorized divisions converted into Panzer-grenadier divisions. Slowly, light tanks would either be relegated to various supporting roles in the field, used for tank training, or would be converted into anti-tank vehicles.

(Opposite, above) A column of Panzers during operations in Yugoslavia advance along a mountain road in April 1941. A Pz.Kpfw.II can be seen followed by a number of Pz.Kpfw.I Ausf. Bs. These tanks are identified by their four return rollers and raised idler wheel.

(Opposite, below) A Pz.Kpfw.II crosses a small engineer bridge during operations in the Balkans in April 1940. This vehicle features some modifications, made after the Polish campaign, including spaced armour on the bow, turret front and superstructure front. The new commander's cupola has not been fitted, but a Notek blackout driving head lamp has been mounted.





A Pz.Kpfw.II drives across a pontoon bridge in the Balkans in April 1941. Engineers can still be seen putting their finishing touches to the wooden structure of the bridge at the near end.

The crew of a Pz.Kpfw.38(t) Ausf. E/F als Zugfr.Wg pose for the camera. Note the bolt pattern on the turret front indicating this vehicle has been bolted with two 25mm armour plates on the front – a main feature of this variant. This tank is designated as a platoon, company or battalion command tank.





Shirtless soldiers are briefed by their NCOs as they stand next to a Pz.Kpfw.38(t). The Panzer carries no armament but has been retrofitted with a Notek blackout headlamp. Note how clean the tank is, suggesting it's being used for training before being released for operational duties in the east.

At a workshop maintenance men can be seen posing with one of the Pz.Kpfw.I Ausf. As. The tank's armament has been removed. Although under-powered, under-gunned and sometimes prone to mechanical failure, this vehicle fought relatively well until it reached its units on the eastern front, where it was up against much heavier and superior vehicles.





A column of vehicles, likely part of a divisional or regimental command unit, on a rather congested road. The leading vehicle is a Pz.Kpfw.I. Note how the fixed superstructure has been mounted with an observation cupola. Initial versions of this tank did not have a cupola.

A Pz.Kpfw.35(t) belonging to the 6th Panzer Division moves at speed along a dusty road bound for the front. Under-gunned and under-armoured, many of these vehicles were lost during the initial stages of the invasion of Russia. By early 1942 they were almost non-existent on the battlefield.





An unidentified Pz.Kpfw.35(t) moving along a hillside. Note the cover over the muzzle of the 3.7cm KwK(t) and the lack of flash suppressors on both the 7.92mm MG 37(t)s. This indicates that the tank is more than likely on a training exercise.

A Pz.Kpfw.38(t) halted on a road with a passing light Horch cross-country vehicle. This vehicle was designed for a four-man crew. The commander's cupola contained four episcopes and immediately forward of this was a panoramic periscope.







(**Opposite, above**) A Pz.Kpfw.I Ausf. B follows a Pz.Kpfw.II along a typical Russian road in early 1941. Note the Notek rear convoy light and an unusual early smoke discharger rack. A white air recognition rectangle can also be seen painted on the engine deck of the Pz.Kpfw.II, which was still being used by tank crews at the beginning of the attack on Russia.

(**Opposite, below**) Using a chain hoist attached to a log tripod, these men appear to be reattaching the engine of a Pz.Kpfw.I Ausf. A. A standard feature of this tank was the removable engine deck/superstructure, which was bolted on.

(**Above**) In this photograph a field maintenance team are again using a chain hoist attached to a log tripod and have removed the Pz.Kpfw.IIs Maybach HL62TR engine. This tank belongs to the 2nd Panzer Division.





(Opposite, above) A pair of *Kl.Pz.Bef.Wg* bringing up the rear of a column of *Pz.Kpw IIIs*. This photograph was taken during the opening phase of the invasion of Russia. A column of infantry march along the road with a motorcycle and light *Horch* cross-country car ahead of it.

(Opposite, below) An interesting photograph showing a *Pz.Kpfw.38(t)* and a mobile refuelling station on the eastern front. Note the dusty appearance of the vehicle. The three digit tactical number 124 is painted in yellow on the side of stowage locker. Note the crew's M35 steel helmets attached to the tank's turrets.

(Above) *Sturmartillerie* or *Panzerjäger* armoured troops marching, wearing their distinctive armoured uniforms with M35 steel helmets. Both tank destroyer and self-propelled assault gun units wore these uniforms.





(Opposite, above) An interesting photograph showing a French R35 that has been converted into a Panzerjäger on the eastern front in 1941. Some 174 of these vehicles were converted into 4.7cm tank destroyers (4.7cm PaK(t) auf Panzerkampfwagen 35R(f)). The vehicles were converted by Alkett between May and October 1941 to try to make an equivalent vehicle to the Panzerjäger I. The result was not as successful as the Panzerjäger I, mainly due to the slow speed of the R35 and the overloaded chassis.

(Opposite, below) A Pz.Kpfw.38(t) on the advance with supporting grenadiers on the Ost Front. The vehicle is heavily laden with supplies including four jerry cans of fuel. The tactical number 9 is painted in yellow on the turret side. Note the divisional insignia letter E painted in yellow on its side on the rear of the tank. This Panzer belongs to the 20th Panzer Division which saw extensive operations on the eastern front.

(Above) A Pz.Kpfw.I more than likely being put through its paces during a training exercise. Typically, when these vehicles were on exercise, their twin MG 13k armaments were not fitted.



Two photographs taken of the same Pz.Kpfw.38(t). This vehicle is identified as being from 12th Panzer Division. Note the divisional insignia in a ring divided in three on the far corner of the superstructure plate. Also of interest is the stowage bin arrangement, where the location of the tactical number 122 has been painted, but hidden in one photo.





While the driver is inside controlling his Pz.Kpfw.38(t) along a Russian road, the other crew members can be seen sitting on top of the vehicle taking in the fresh air. Note the stowage bin with the three digit tactical number 223 painted in yellow on the side of the tank's locker with the national cross painted next to it.



Two photographs taken in sequence. Here on a road a Pz.Kpfw.IV can be seen following in the wake of a leading Pz.Kpfw.38(t). During the initial stages of the invasion of Russia five Panzer divisions were fitted with Pz.Kpfw.38(t)s: the 7th, 8th, 12th, 19th, and 20th.





A Pz.Kpfw.38(t) is here moving across an engineer's bridge. The vehicle has a large tactical number on its turret side, 132, painted in red with a white outline. The stowage bin shows the national cross. Note the jerry can stored on the rear deck. The long distances over which these Panzers travelled can well be imagined and fuelling them was a constant preoccupation.

A column of Pz.Kpfw.38(t)s on a dusty round bound for the front lines in Russia. The Panzers appear to be passing a command post. There is a camouflaged radio vehicle on the near right of the image.





(Above) A Pz.Kpfw.38(t) with its commander standing up in the cupola. During the campaign in Russia, some 623 of these tanks saw action. Most were used to spearhead the drive through the heart of the Soviet Union.

(Opposite, above) Infantry are using this Pz.Kpfw.35(t) as cover during an operation somewhere on the eastern front. The number 131 is painted in yellow on the rear of the turret. The jerry cans that have been placed on the rear of the engine deck.

(Opposite, below) One of the quickest and easiest ways to get infantry from one place to another on the battlefield was to hitch a lift on a Panzer. Here soldiers can be seen mounted on a Pz.Kpfw.38(t) during early autumn operations in Russia. Note the state of the road after a downpour of rain.





(Above) Photographed during an operation on the battlefield, this Pz.Kpfw.38(t) can be seen advancing across a field. In the distance black smoke rises in the air, indicating fighting in the area.

(Opposite, above) An interesting photograph showing an Aufklärungspanzer 38(t) rolling along a road. This 38(t) has been converted into a reconnaissance vehicle. The old turret has been removed and fitted with a 2cm KwK 38 gun. A single MG 42 was also installed. Note the open top has been fitted with anti-grenade grilles.

(Opposite, below) An interesting photograph showing a Pz.Kpfw.38(t) Ausf. E or F moving along a typical Russian road somewhere in the Soviet Union. The vehicle has a frame antenna for its long range Fu.5 and Fu.8 radio set. The tank was used by the Panzer regiment headquarters company.





A Pz.Kpfw.38(t) has halted on a snowy road on the eastern front. By this period of the war the ever increasing demand to replenish the Panzerwaffe with heavier tanks was eventually to see the relegation of the 38(t) to second-line duties.



A column of Pz.Kpfw.38(t)s on a snowy road on the eastern front in late 1941. By this stage of the war the Russian army were beginning to fight back and the light tanks began to meet significant numbers of new T-34 and KV-1 tanks. The Pz.Kpfw.38(t) was no match for this, and as a result losses grew to staggering proportions.



A Pz.Kpfw.II Ausf. F during winter operations on the Ost Front. This variant is identified by the straight superstructure front plate, the retention of the five road-wheels with spring bundles for the suspension, the return rollers, track links with pairs of edge-mounted guide horns, drive sprockets and the later style idler wheel.



On the eastern front the crew of a Pz.Kpfw.38(t) pose for the camera. This variant is either an Ausf. E, F or G, as identified by the configuration of the radio operator's visor on the superstructure plate. Note a local man standing on the left next to the tank. This photograph was taken during the drive on Moscow in late 1941.

A Pz.Kpfw.I has halted, more than likely during winter operations in central Russia. Infantry can be seen marching. A motorcyclist wearing his rubberised waterproof coat can be seen standing in front of the tank and confers with some of the troops as they pass by.





(Above) On the advance in winter 1941 and infantry on foot can be seen moving across a field supported by two Pz.Kpfw.38(t)s. The leading tank is a Panzerbefehlswagen 38(t) Ausf. E or F, characteristically fitted with the frame antenna for the long range Fu.5 and Fu.8 radio set.

(Opposite, above) A Pz.Kpfw.38(t) Ausf. G advancing across a snowy road. The placement of the Notek blackout headlamp on the glacis identifies this as being an Ausf. G. A road wheel can be stored on the bow and is acting as a stowage tray for cables and other gear.

(Opposite, below) A group of soldiers pose in front of a Pz.Kpfw.II in winter 1941. The Panzer cannot be identified other than part of its tactical number painted in yellow on its turret side: 10.





A Pz.Kpfw.I moving along a pine road supported by foot soldiers. There are no visible markings on this Panzer other than a small national cross painted on its side.

Chapter Three

Battles in Russia 1942–43

By 1942 it was apparent that the Panzerwaffe would not be able to exploit their Soviet enemy if they did not quickly up-gun their outdated light tanks. This led to the Marder I, which mounted the 7.5cm PaK 40 anti-tank gun on a French Lorraine chassis.

Another anti-tank vehicle introduced in 1942 was the second series of the Marder, known as the Marder II. This was based on the chassis of the Pz.Kpfw.II. There were two versions: the first mounted modified Soviet 7.62cm guns firing German ammunition, while the other mounted the powerful German 7.5cm PaK 40 gun.

In the same year, the Marder III was produced. This vehicle mounted either Soviet 76.2mm F-22 Model 1936 divisional field guns or German 7.5cm PaK 40, in an open-topped cupola on top of the chassis of the Panzer 38(t). While it offered little protection to the crew, it added significant firepower. Although the Marders were not fully armoured, and were basically an interim solution to a growing problem, its infantry gun companies were relatively successful and supported deep drives through Russia supporting what was left of the light tanks in the field, and heavier armoured vehicles, such as the Pz.Kpfw.IV.

In spite of the successes of the spring of 1942, some of the older light Panzer units did not have their losses replaced and fought with what they had. This put additional strain on the already inadequate capabilities of the converted Pz.Kpfw.I, known as the Panzerjäger I, and Sturmpanzer I. The Sturmpanzer I had already sustained considerable losses, and it was apparent that these vehicles were no match against heavier Soviet armour. The Marders, on the other hand, fared better, and when serving in the infantry regiments they scored many successes along the front. As a result, they would go on to see further action with a host of other new Panzerjägers and self-propelled heavy infantry gun companies.

Through 1942, Germany continued striving to overcome the mammoth task of defeating the Red Army, with more Panzer divisions being raised and motorized divisions converted into Panzergrenadier divisions. A number of fresh divisions were also deployed on the front lines.

Another problem the Panzerwaffe were facing on the eastern front was heavier Russian tank fire power, such as that of their T-35 tanks.

The Czech built Pz.Kpfw.35(t) had seen huge losses on the eastern front due to its thin armour and inadequate firepower. As a result, by mid-1942, there were only twenty-six in working condition, and they were sold to Romania. Some of the turrets and hull machine guns were removed so that the chassis could serve as ammunition carriers or artillery tractors.

As for the Pz.Kpfw.I, this small tank had never been suitable for the Russian campaign. Even the modified and up-gunned versions were no match against the Red Army, so these un-battle-worthy machines were either broken up and cannibalised for parts, or tasked to alleviate logistical transportation issues along the front by towing lorries or other light vehicles that had either developed mechanical problems or simply required towing through the mud. Other Pz.Kpfw.Is were deployed for anti-partisan actions or rearguard protection duties, but saw little conflict.

Although many Pz.Kpfw.II were being modified into Panzerjägers, the later variant Ausf. F was still operating in early 1942. From March 1941 to December 1942, some 524 of these machines were built and transported for action on the eastern front. But many were lost in battle.

During early winter operations in 1942 two Pz.Kpfw.38(t) crewmen take a cigarette break. During this period the Panzerwaffe had ground to halt in the snow and operations were put on hold until the spring thaw.





The crew of a Pz.Kpfw.35(t) rest on their tank during a pause in their march in early 1942. Note the winter clothing the crewmen are wearing: the standard issue Wehrmacht greatcoat.



An interesting photograph showing what appears to be a Pz.Kpfw.38(t) during winter operations towing a 3-ton Opel Blitz truck along a snowy road. The first Russian winter was hard for the Panzerwaffe logistically. Wheeled vehicles constantly became stuck in the mud and snow and had to be pulled out.



(Above) A column of armoured vehicles including 3-ton Opel Blitz trucks and a Pz.Kpfw.38(t) tank on a road in winter 1942. During first six months of the war on the eastern front Panzer divisions relied heavily on the lighter tanks such as the Pz.Kpfw.38(t) to provide the armoured punch necessary to break through enemy lines. This put an increasing strain on the light tanks, and many were either destroyed or developed mechanical problems.

(Opposite, above) A Pz.Kpfw.II with lots of stowage including three jerry cans rolls along a road. It has not received its winter whitewash which was just beginning to be issued to tanks during this period. Instead, the vehicle still retains its dark grey camouflage paint.

(Opposite, below) This photograph was taken by a passing soldier from another vehicle, showing two Pz.Kpfw.38(t)s on a muddy road alongside a river somewhere on the eastern front in early 1942.







(Opposite, above) Two Pz.Kpfw.II Ausf. Fs are seen crossing an engineer bridge in 1942. The tank is identified as Ausf. F by the shape of the front superstructure plate which was bolted straight across, unlike earlier variants where there were two front plates bolted. Note in the distance on the river bank the Sd.Kfz.7/1 mounting a 2cm FlaK 38 gun.

(Opposite, below) Armoured vehicles comprising Pz.Kpfw.35(t)s, Pz.Kpfw.38(t)s, Pz.Kpfw.IIs and Pz.Kpfw.IIIIs are spread out across a field ready for a possible aerial attack.

(Above) Armour being transported by rail to the battlefield during operations on the eastern front. Pz.Kpfw.IIs can be seen secured on the special flat-bed rail cars. This was the best way of transporting tanks from one part of the front to another.



A prime mover towing a 10.5cm howitzer along a road. To the left is a stationary Pz.Kpfw.III and a light Horch cross-country car. Right of the car is a stationary Pz.Kpfw.38(t) with the number 523 painted in red with a white outline on the turret side. Note the tree behind the tank – a crewman is sitting against the trunk resting.

A Pz.Kpfw.II can be seen advancing along a muddy field passing a column of horse-drawn vehicles. Animal draught was mostly used on the eastern front to tow equipment and ordnance.





A Pz.Kpfw.38t Ausf. E or F als Zugfuhr.Wg on a main road inside a captured Russian city in 1942. The tank appears to be supporting an infantry Opel Blitz 3-ton truck which is transporting a full complement of infantry, more than likely to front line operations.

A Pz.Kpfw.38(t) leads a column of armour along a typically muddy road. The mud produced from a few hours of rain was enough to turn a relatively typical uneven Russian road into a quagmire. Note the horse-drawn vehicles moving in the opposite direction.





(Above) A Pz.Kpfw.38(t) has attempted to cross an old wooden bridge that's been erected over a ditch and it has collapsed causing the tank to become stuck. A crewman poses for the camera standing next to it. Note the national flag draped over the engine deck for aerial recognition. The four-digit number 1113 is painted on the turret side. This numbering was used if the tank units were operating more than nine companies.

(Opposite, above) Two Pz.Kpfw.IIs. The tank on the left is heavily laden with gear, and the other Panzer is a staff vehicle.

(Opposite, below) A Pz.Kpfw.II crosses a small stream. The two-digit tactical sign 42 is painted in yellow on the turret side. Note the divisional insignia of the 11th Panzer Division. The division was part of Case Blue from June 1942 onward, participating in the capture of Voronezh and the drive towards Stalingrad. It luckily avoided being trapped with the 6th Army, but lost a lot of its armour during winter operations in 1942 with virtually all of its light Panzers destroyed.





An armoured column has halted along a road somewhere on the eastern front due to heavy fighting ahead. Note the Pz.Kpfw.II with a national flag draped over the engine deck and a 200-litre fuel drum. Infantry are hitching a lift and one soldier armed with an MP40 can be seen clambering onboard.

A Pz.Kpfw.38(t) drives through a Russian village while the locals look on. It is heavily laden with supplies, much stowed on the engine deck including 20-litre jerry cans. The tactical number 1023 is painted on the turret side.





On a congested road is a muddy Pz.Kpfw.38(t) Ausf. E, F or G leading a group of vehicles during operations in the summer of 1942. Behind the tank is an Opel Blitz 3-ton truck more than likely carrying infantry.



(Above) A Pz.Kpfw.38(t) advances along a muddy road. The vehicle has a three-digit tactical number 841 painted in yellow on the engine deck. The national cross is painted on the rear of the turret alongside the insignia of the 10th Panzer Division.

(Opposite, above) The crew of a Pz.Kpfw.38(t) Ausf. B are standing next to their vehicle on a dusty road somewhere on the eastern front. Of interest is the installation of a smoke grenade rack at the rear of the tank. This photograph was taken in the early summer of 1942. By the beginning of the summer offensive not all the Panzer divisions were fully equipped and ready for combat. Some of the older units were still not ready for full scale operation and many were supported by light Panzers.

(Opposite, below) A Pz.Kpfw.35(t) next to a light Horch cross-country vehicle. The crew are wearing their distinctive black Panzer clothing alongside their vehicle.





A halted Pz.Kpfw.38(t) with an infantryman boarding. Though this tank was under-gunned the KwK 37(t) cannon was still capable of firing an AP shot muzzle at a velocity of 750 metres per second which could penetrate 3.2cm of armour at 1,100 metres.

A Pz.Kpfw38(t) on the move in 1942. Although by this time these tanks were being relegated to second-line duties, a number still operated on the eastern front until late 1942.





A Pz.Kpfw.38(t) appears to have developed a mechanical problem as it is halted on the roadside drawing some considerable attention. Note the logs on the rear of the Panzer to help it cross the often boggy terrain.

This command element from a Panzer division is seen in a field in 1942 on the eastern front. It is showing a Panzerbefehlswagen Pz.Kpfw.I Ausf. B command tank with two motorcyclists in support.







(Opposite, above) A very congested road on the eastern front showing various armoured vehicles most likely including a divisional command unit. Note the Pz.Kpfw.38(t) with the divisional insignia painted on the rear of the turret plate in yellow showing this tank belongs to the 7th Panzer Division.

(Opposite, below) Out in the field a Pz.Kpfw.II is on the advance with an armoured column. Although this Panzer was deemed in 1942 to be under-gunned and lightly armoured in spite its various modifications, it was still the most numerous light Panzer in the divisions.

(Above) A column of vehicles comprising the Pz.Kpfw.38(t) and light Horch cross-country cars move along a dusty road bound for the front. In the distance black smoke billows skyward indicating some heavy fighting. Note what appears to be a modified version of the 20th Panzer Division sideways 'E' emblem.





(Opposite, above) A Pz.Kpfw.38(t) during a training exercise. The vehicle has the tactical number 2 painted in white on the turret side. A small black/white national cross insignia can be seen painted on the vehicle's side. The base colour of the Panzer is dark grey and it is over-sprayed with patches of dark brown.

(Opposite, below) A column of Pz.Kpfw.38(t)s crossing a field towards a village. Unlike France, where the strategic objective was just mechanically attainable, in Russia objectives were much further away and most of the drive was off-road. Tank crews found it very hard going and mechanical unreliability was a constant problem.

(Above) A Pz.Kpfw.38(t) on the advance along a sandy road in mid-1942 during the summer offensive south towards the Caucasus. The tank is finished in a single colour of dark grey.





Two photographs showing the Pz.Kpfw.38(t) advancing along a road. Most of the variants of the 38(t) differed only in minor detail, such as the installation of a smoke grenade rack at the rear of the Ausf. B, while the Ausf. E armoured plating was doubled to the front and sides.

A knocked-out Pz.Kpfw.38(t) Ausf. B, C or D can be seen on the side of a road. Infantry on bicycles have stopped and are about to take a look at the disabled tank. The Panzer has been stripped of all its loose items as it waits for a recovering unit.





(Above) A column of Pz.Kpfw.38(t)s rolls along a road bound for the front. Through the course of this tank's short existence on the eastern front there were various modifications made to it, including a tail-lamp for convoy travelling, as in this photograph.

(Opposite, above) A Pz.Kpfw.38(t) rolls along a road during the summer of 1942. Note all the other various vehicles spread out across the terrain. They were spaced like this to minimise the impact of an aerial attack.

(Opposite, below) A camouflaged Pz.Kpfw.I Ausf. B in a field. Note the crewman with a rag cleaning part of the of the stowage locker on the near track-guard on engine deck. A Gebirgsjäger infantryman is watching him with interest.







(Opposite, above) A Pz.Kpfw.II Ausf. F on the advance along a muddy road. There is no evidence of any markings on the vehicle. The tank is more than likely finished in a single paint colour of dark grey. Of particular interest, the vehicle has the new commander's cupola with periscopes around the rim, and spaced armour bolted on the bow.

(Opposite, below) An interesting photograph showing a burnt-out Pz.Kpfw.38(t) Ausf. B, C or D variant. This vehicle has more than likely been destroyed by anti-tank fire. Note the large number 811 painted in red with a white outline on the turret side.

(Above) Hurtling a long a dusty road is a Pz.Kpfw.38(t) which can be identified as an Ausf. E or F by the configuration of the radio operator's visor flap on the superstructure front plate. This vehicle has a Notek blackout driving head-lamp on the port side track guard.



(Above) A Pz.Kpfw.38(t) wades across a river with the remaining crew sitting on the vehicle.

(Opposite, above) Two Pz.Kpfw.II Ausf. Bs lead a column of Pz.Kpfw.38(t)s during an operation. Note the second Panzer displaying the insignia of the 12th Panzer Division, painted on the superstructure front plate.

(Opposite, below) An interesting photograph showing a column of Pz.Kpfw.38(t)s from the Romanian First Royal Armoured Division, led by an Ausf. F als Zugfr.Wg. This photograph was taken in the summer of 1943.







(Opposite, above) The crew of this Pz.Kpfw.38(t) appear to be re-tracking this Panzer after it threw its track. The vehicle carries a large 832 on the turret side, painted in red with a white outline. The national cross is painted on the side of the tool box.

(Opposite, below) A column of Pz.Kpfw.38(t)s on the road during operations on the eastern front in the summer of 1942. The leading vehicle appears to be an old Ausf. B as it still retains the original Czech 'battle antenna', seen running above the nearside track-guard.

(Above) An excellent photograph showing various armoured and support vehicles spread out across a field as far as the eye can see. Among these vehicles are the Pz.Kpfw.35(t), Pz.Kpfw.38(t), Pz.Kpfw.II and heavier tanks like the Pz.Kpfw.IV and the Sturmgeschütz (StuG) III.

(Below) New introductions to the battlefield were modified light Panzers converted into tank hunters, or Panzerjäger. Here crossing a field is a Marder II. There were two versions of the Marder II: the first mounted modified Soviet 7.62cm guns firing German ammunition, while the other mounted the powerful German 7.5cm PaK40 gun. The Marder was a stopgap solution to deal with the overwhelming Soviet firepower that was now beginning to dominate the battlefield in mid-1942.





A whitewashed Marder II being prepared for transportation on a flatbed rail car during operations on the eastern front in early 1943. While these vehicles offered an interim solution for mobile anti-tank support, the high profile of its armoured sides made it vulnerable, and crew loss grew as they were not protected adequately. However, despite problems, they successfully served the Panzer, Panzergrenadier and infantry divisions with punchy anti-tank support.



A converted Pz.Kpfw.II Sd.Kfz.131 Marder II during the winter of 1943. Once again this vehicle was designed with a high profile, and open-topped armour with minimal protection for the crew. This particular vehicle has received a full coating of winter whitewash paint.

An excellent photograph of two of the crew posing in front of their Pz.Kpfw.38(t) Marder III on the eastern front in 1943. Note the special uniform that both the men are wearing, which was introduced for Sturmartillerie and Panzerjäger units. The Marder has had foliage applied to its hull and cannon to help conceal it.







(Opposite, above) An interesting photograph of the crew (gunner, loader and driver) with their Marder Pz.Kpfw.38(t) from an unknown Panzerjäger Abteilung in 1943. The loader can be seen with one of the 7.5cm PaK 40/3 shells. Ammunition capacity for this vehicle was thirty-eight shells.

(Opposite, below) A Marder III passing behind a battery of 10.5cm howitzers on the eastern front. This vehicle is fitted with a captured 7.62cm Soviet Model 36 anti-tank gun. The vehicle also had a travel lock on the front of the hull to secure the huge barrel while travelling long distances. Some 418 of these variants were built in 1942.

(Above) A Marder III being prepared for battle conceals itself behind a tree. The Marder series were not fully armoured, and was just an interim solution to the growing threat of heavier Russian armour. Basically the Marder was more of a gun carriage than a proper Panzerjäger that could exchange shells with enemy tanks. Nevertheless, they undertook sterling service on the eastern front.



A battery of Marder IIIs in a field.

Two crewmembers in front of their Marder II in a field on the eastern front. These improvised light tank destroyers which carried Germany's most powerful anti-tank weapons during the earlier period of the war in Russia, performed well. Initially they were the only effective German anti-tank weapons really available to counter Soviet heavy tanks.



Chapter Four

Last Years 1943–45

As a response to the high losses, in the latter part of 1942 the Germans began building a new generation tank hunter using the chassis of the Pz.Kpfw.II. By February 1943 a new vehicle, known as the Sd.Kfz.124 (Wespe) or the Leichte Feldhaubitze 18/2 auf Fahrgestell Panzerkampfwagen II (Sf) (light field howitzer 18 on Panzer II chassis (self-propelled)), came off the production line. Its primary task was to serve as a mobile artillery ammunition carrier. The design for the Wespe was produced by Alkett and was based on the Pz.Kpfw.II Ausf. F chassis. This open-topped and lightly-armoured vehicle mounted the powerful 10.5cm leFH 18 howitzer. The Wespe was allocated to the armoured artillery battalions, or Panzer-artillerie Abteilungen, of Panzer divisions. It did not take long for the Wespe to earn respect on the battlefield. The tank hunter became so successful that Hitler ordered all production of the Pz.Kpfw.II chassis to be used in the production of the Wespe and cancelled all other projects, including the production of more Marder II self-propelled anti-tank guns for the eastern front.

By mid-1943, only converted variants of Hitler's once vaunted light Panzers took prime position in the Panzer divisions on the eastern front. While the light panzers were never again to take pride of place, as they had done in the early years of war, their converted variants were now in place to fight out the war until the end.

The last two years of the war would see the transformation of tank warfare on both sides. Heavier Panzers such as the Pz.Kpfw.IV, Tiger and Panther would take prime position on the battlefield. Even these vehicles were to be modified as tank hunters, and take centre stage attacking enemy armour and supporting troops. Many of the new generation tank hunters and self-propelled artillery were produced at rapid speed to ensure they would come off the production line to fight an ever changing battlefield. The lighter Marders and Wespes would continue to support the front lines and their mounted artillery or anti-tank guns would give added armoured punch, even though it was recognised that these light machines were still a stopgap solution in a Panzerwaffe that was struggling to maintain its line and cohesion against the massive might of the Red Army.

Much hope was hinged on these vehicles in the summer offensive in 1943. When Hitler launched his massive Kursk offensive, Operation Zitadelle, his Panzerjäger were at the forefront of the battle. But they were still too few to do any serious damage to the Soviet army. Losses during Zitadelle were huge.

As the summer turned into winter in 1943 the need for more powerful self-propelled artillery and Panzerjäger vehicles became ever more apparent. While the Marder and Wespe were successful, their numbers had dwindled, which began to starve the infantry of fast-moving artillery and anti-tank support.

Production of the Panzerjäger expanded during 1943/4. On the eastern front, operations in early 1944 did little to impede the Soviet offensives. Panzer divisions were being slowly pressed westward with tank units unable to strike a decisive counter-blow.

Once more, despite the setbacks, there was a genuine feeling of motivation in the ranks of the Panzerwaffe along with a renewed determination to prevent the collapse of the eastern front. Their confidence was further bolstered by the efforts of the armaments industry as they began producing many new vehicles for Russia. In fact, during 1944, the Panzerwaffe were better equipped than at any other time on the eastern front. In total, some 20,000 fighting vehicles, including 8,328 medium and heavy tanks, 5,751 assault guns, 3,617 tank destroyers and 1,246 self-propelled artillery carriages of various types reached the front. Included in these new arrivals were the second generation of tank-destroyers, the Jagdpanzer IV, followed by the Hetzer.

The Hetzer (pursuer) was a light tank destroyer which made its debut in July 1944. It was officially known as the Jagdpanzer 38 Sd.Kfz.138/2. Based on a modified Czechoslovakian Pz.Kpfw.38(t) chassis, the Hetzer was low-profiled and armed with a 7.5cm PaK 39 L/48. It was protected by thick all-round sloped armour. A total of 2,584 Hetzers had been constructed by the end of the war, and these equipped the Panzerjägerabteilungen or tank destroyer battalions of the infantry divisions, providing them with mobile anti-armour support. During its lifespan there were five variants produced: Befehlswagen 38 command variant, fitted with a 30W FuG 8 radio set, Panzerjäger 38(t) mit 75mm L/70; Panzerjäger 38(t) mit 105mm StuH 42/2 L/28; Jagdpanzer 38 Starr mounting a 7.5cm PaK 39 cannon; and the Flammpanzer 38 Jagdpanzer 38, which was modified with a Keobe flamethrower in place of the main gun.

The Hetzer and other modified, up-gunned vehicles were undoubtedly formidable fighting machines whose arrival were a welcome relief to the hard-pressed Panzerwaffe. But they were only a temporary relief in the overall predicament that was festering for the German army on the eastern front. Though many were delivered, it was still too few, and it was left to the Tigers and Panthers to confront an

overwhelming foe. However, these were also too thinly stretched to make any great impression against the massive tank strength of the Red Army.

The second half of 1944 was characterised by a frantic attempt by the Panzerwaffe to stem the rout of the Soviet drive into Poland. Between Army Group Centre and Army Group North, German positions were depleting and Panzer losses were growing at an alarming rate. Lack of fuel, not enough spare parts, the lack of trained crews, all played their parts in reducing the effectiveness of the Panzerwaffe in the final year of the war.

Marders, Wespes and Hetzers continued their operational duties, trying desperately to alleviate the dire situation. In the last months of the war tank-destroyers and assault guns would soon outnumber the tanks, showing the Panzerwaffe's increasingly defensive role.

While Hitler's original light panzers were long gone, their converted variants fought on to the bitter end. But much was owed to them. They and crews that operated them had proven to be lethal opponents, especially in the Blitzkriegs. But in the end, like all the German vehicles that entered the war, there were too few to avert catastrophe.



A battery of what were known as the Sd.Kfz.124 Wespe (Wasp), officially called the Leichte Feldhaubitze 18/2 auf Fahrgestell Panzerkampfwagen II (Sf.) (Light field howitzer 18 on Pz.Kpfw.II chassis (self-propelled)). These converted tank killers were introduced onto the battlefield in February 1943.





(Opposite, above) On the battlefield a Wespe is being prepared for action. These vehicles were primarily tasked to serve as mobile artillery ammunition carriers. The design for the Wespe was produced by Alkett, and was based on the Pz.Kpfw.II Ausf. F chassis. To modify the vehicle into a lethal mobile artillery machine the designers moved the engine slightly forward and lengthened the chassis to make room for the rear-mounted 10.5cm leFH 18 howitzer. The superstructure was open-topped and lightly armoured and there was sufficient space for rear access, as seen in this photograph.

(Opposite, below) An interesting photograph showing a battery of whitewashed Wespes. Out on the battlefield the Wespe was allocated to the armoured artillery battalions or Panzerartillerie Abteilungen of Panzer divisions. They needed a vehicle that would be able to keep up with the fast moving Panzers.

(Above) In action, a battery of Wespe during defensive action in Poland in 1944. The Wespe became popular with its crew due to its reliability and impressive manoeuvrability. It became so successful in 1943 that Hitler ordered all production of the Pz.Kpfw.II chassis to be used for the production of the Wespe and cancelled all other projects, including producing more Marder II self-propelled anti-tank guns for the eastern front.



A well camouflaged 10.5cm Wespe during operations on the eastern front. Although armed with a powerful 10.5cm leFH 18/2 L/28 gun, it was protected by a lightly armoured superstructure, and as a result many were lost in battle. The Wespe became the most common German self-propelled light howitzer of the war.

A battery of 10.5cm Wespen during a fire mission. Between 1943 and 1945 these vehicles gave good service in all combat situations. Within their thirty-eight light armoured howitzer units, the Panzer division of the Wehrmacht had at least seventy-six batteries using self-propelled guns, and a total of some eighty-five batteries, including armoured brigades and special units.





Two photographs taken in sequence showing the Lorraine-based Marder I at a rail depot in the summer months of 1944. The Marder I was built on the Lorraine chassis. Later, several other French and Polish tanks were used as the conversion base for the Marder I, including the Hotchkiss H39 and FCM 36. This vehicle carried the 7.5cm PaK 40 anti-tank gun. Due to the large gun, the original crew compartment superstructure was removed to create the space needed to operate it, and mounted on top of the chassis with an open lightly armoured shield to protect the crew. The vehicle was built to provide mobility for anti-tank-gun operations. While its service was relatively short-lived, the Marder I provided good mobile anti-tank fire to the infantry and Panzer regiments. However, in France, where this vehicle mainly operated, during the bitter fighting that raged in the Normandy sector, many were lost as German troops withdrew back to the German frontier. By February/March 1945, only six of the Marder Is were operating in the entire German army.







(**Opposite, above**) An interesting photograph showing the crew of a Wespe camouflaging their vehicle on a road during operations in 1944. This self-propelled artillery vehicle was very effective in both offensive and defensive roles, but by this stage of the war the German war machine was fighting for survival and suffering from shortages of every kind.

(**Opposite, below**) The Hetzer 38(t) moving along an Italian street in 1944. This vehicle was well designed. The main armament was mounted off centre to the right of the mantlet to minimise the possibility of deflection of incoming rounds down into the hull.

(**Above**) An interesting photograph showing troops hitching a lift aboard a Hetzer 38(t) during the late war period. Note how low profiled the vehicle is and its thick all-round sloped armour. Its wheels are protected by side skirts or *Schurtzen*, and in September 1944 these were bent inwards at the ends to prevent the vehicle catching onto bushes, allowing the disembarkation of crew or troops without catching the *Schurtzen*.



(Above) A Hetzer 38(t) advances along a road. There were 2,584 Hetzer built, and these equipped the Panzerjägerabteilungen or tank destroyer battalions of the infantry divisions, giving them some mobile anti-armour support.

(Opposite, above) An abandoned Hetzer in 1945. This vehicle had modified suspension and larger road-wheels from Praga TNH n. A prototype reconnaissance tank with an up-rated 160PS Praga AC/2 6-cylinder engine controlled by a Praga-Wilson gearbox engine, the Hetzer undertook sterling service during the last months of the war. However, like all the German armour employed on the front lines, they were too few and dispersed to hold back the enemy.

(Opposite, below) A photograph showing an abandoned late production Jagdpanzer 38 or 'Hetzer' being inspected by Hungarian troops in 1945. The crew have removed the MG 34 and escaped on foot. The vehicle has received an application of olive-green and dark yellow over red primer. Of interest, note the long log attached to the other side of the Hetzer which was used to lay under the vehicle's tracks for un-ditching, such as self-extraction from riverbanks, trenches or ditches.







(Opposite, above) An abandoned Hetzer 38(t) seen in France with local people standing nearby. During its limited wartime lifespan there were five variants produced of the Hetzer: the Befehlswagen 38 Command variant which was fitted with a 30W FuG 8 radio set; Panzerjäger 38(t) mit 75mm L/70; Panzerjäger 38(t) mit 105mm StuH 42/2 L/28; Jagdpanzer 38 Starr mounting a 7.5cm PaK 39 cannon; and the Flammpanzer 38 Jagdpanzer 38 which was modified with a Keobe flamethrower in place of the main gun. All these modified vehicles, though employed in relatively small numbers on the battlefield, played a crucial part on both the eastern and western fronts. In spite of the dire situation of the Panzerwaffe in the last year of the war, the variety of fighting vehicles left on the front lines continued to fight on to the death.

(Opposite, below) French folk pose for the camera on board another abandoned Hetzer tank destroyer. Plenty of foliage has been applied on this vehicle. The Hetzer's 7.5cm PaK 39 L/48 gun was a modified version of the 7.5cm StuK 40 L/48 mounted on the Sturmgeschütz III/IV assault guns, and capable of destroying any Allied or Soviet tank. Unlike the Marder series where the fighting compartment was open, the Hetzer had fully enclosed armour.

(Above) In a decimated town a battery of Marder IIIs have been knocked out of action, more than likely by an aerial attack. In the last year of the war, with virtually no Luftwaffe support German armour succumbed to huge losses. The situation became so bad that by mid-1944 the Panzerwaffe were compelled to move their armour mainly at night to avoid being attacked.

Appendix One

Panzer Variants

Panzer I Variants

Panzerkampfwagen I Ausf. A, ohne Aufbau

The first Panzer I vehicles to be built. Fifteen of this variant were completed by various firms (Daimler-Benz, Henschel, Krupp, MAN, and Rheinmetall) in a program intended to develop industrial capacity and provide initial training vehicles to the Wehrmacht. The Ausf. A ohne Aufbau was a Panzer I hull without any superstructure or turret. The interior was completely open. The vehicle was crewed by a student driver and instructor, with room for three student observers behind them. The suspension and hull were identical to the Ausf. A, but total weight was reduced to 3.5 tons and height to 1.15m. Performance was similar.

Munitionsschlepper auf Panzerkampfwagen I Ausf. A

A total of fifty-one Sd.Kfz.111s, the *Munitionsschlepper* (ammunition tractor), were built to provide Panzer units with an armoured tracked vehicle to resupply panzer units at the front.

Brückenleger auf Panzerkampfwagen I Ausf. A

Bridging equipment was tested on prototype Ausf. A chassis. However, due to the weak suspension it was decided to use it on the Pz.Kpfw.II chassis.

Flammenwerfer auf Panzerkampfwagen I Ausf. A

Designated the Sd.Kfz.265, the kl.Pz.BefWg *Flammenwerfer* had a portable flame-thrower and was mounted in one of the machine guns. It was intended to give the Panzer I additional firepower against close targets.

Kleiner Panzerbefehlswagen

The kl.Pz.Bef.Wg served with all Panzer units during the early part of the war. A total of 184 were built by Daimler-Benz at the same time as Ausf. B production, and six prototypes were built from Ausf. A panzers.

4.7cm PaK(t) (Sf) auf Panzerkampfwagen I Ausf. B

Known as the Panzerjäger I, or tank hunter, this was the first in a series of Panzer destroyers. For its construction the turret was removed and a Czech 4.7cm PaK(t)

anti-tank gun was installed. The gun was capable of 35 degrees of traverse and elevation from -8 degrees to $+12$ degrees. Eighty-six rounds were carried for the main gun.

15cm sIG 33 (Sf) auf Panzerkampfwagen I Ausf. B

This was known as the Bison. Mounting a 15cm heavy infantry gun, the sIG 33, it was installed inside a tall superstructure. A total of thirty-eight were converted from Ausf. B variants in February 1940. They served with six heavy SP infantry gun companies and remained in service until 1943.

Flammenwerfer auf Panzerkampfwagen I Ausf. B

This prototype field model was constructed, but there is no record of it entering service.

Ladungsleger auf Panzerkampfwagen I Ausf. B

This charge layer was converted on the rear deck of an Ausf. B Panzer and used to lay explosives to destroy field fortifications. While rare, these vehicles were used in armoured engineer companies.

Flakpanzer

The Panzer I was converted into a self-propelled anti-aircraft gun which was commonly known as Flakpanzer I. Developmental costs were extremely high and few were produced.

Panzer II Variants

Panzer II Ausf. A (Pz.Kpfw.IIA)

This Ausf. A was built in limited numbers. It was not the normal Ausf. A variant and was subdivided into three sub-variants. The Ausf. A/1 was initially built with a cast idler wheel with rubber tyre, but this was replaced after ten production prototypes with a welded part. The Ausf. A/2 improved engine access issues. The Ausf. A/3 included improved suspension and engine cooling. A total of seventy-five were produced from May 1936 to February 1937 by Daimler-Benz and MAN.

Panzer II Ausf. B (Pz.Kpfw.IIB)

A total of twenty-seven Ausf. Bs were built. New suspension was fitted and the length of the body was increased, along with deck armour, superstructure and turret roof strength.

Panzer II Ausf. C (Pz.Kpfw.IIC)

This Ausf. C was the last in the first series of Pz.Kpfw.IIs. Various modifications were made including a major change to the suspension and the replacement of the six small road wheels and tracks. A total of twenty-five were produced from March to July 1937.

Panzer II Ausf. A, B and C

The first true production model, the Ausf. A entered production in July 1937 and was superseded by the Ausf. B in December 1937, introducing only minimal changes. A few minor changes were made in the Ausf. C version, which became the standard production model from June 1938 to April 1940. A total of 1,113 of these vehicles were built by Alkett, FAMO, Daimler-Benz, Henschel, MAN, MIAG, and Wegmann.

Panzer II Ausf. D and E

Ausf. D was developed as a cavalry tank in a reconnaissance role. Only the turret was the same as the Ausf. C model, with a new hull and superstructure design and the use of a Maybach HL62TRM engine driving a seven-gear transmission (plus reverse). A total of 143 Ausf. D and Ausf. E tanks were built from May 1938 through August 1939 by MAN, and they served in Poland. They were withdrawn in March 1940 for conversion to other types after proving to have poor off-road performance.

Panzer II Ausf. F

The Ausf. F was designed as a reconnaissance tank and served in the same role as the earlier models. The superstructure front was made from a single piece of armour plate with a redesigned visor. A dummy visor was placed next to it to reduce anti-tank rifle bullets hitting the real visor. A total of 524 were built from March 1941 to December 1942 as the final major tank version of the Panzer II series.

Panzer II (Flamm)

Based on the same suspension as the Ausf. D and Ausf. E tank variant, the Flamm (also known as Flamingo) used a new turret mounting a single MG 34 machine gun, and two remotely controlled flamethrowers mounted in small turrets at each front corner of the vehicle. 150 were built from January 1940 to March 1942. These were mostly on new chassis, but 43 were converted from Panzer II Ausf. D/E. The Flammpanzer II were sent to the eastern front.

Panzer II Ausf. L 'Luchs'

This was a light reconnaissance tank, and designated as the Ausf. L. It was the only Panzer II design with the Schachtellaufwerk overlapping/interleaved road wheels and 'slack track' configuration to enter series production. Some 100 of these vehicles were built from September 1943 to January 1944 in addition to conversion of the four Ausf. M tanks. Originally designated VK 1303, it was adopted under the alternate name Panzerspähwagen II and given the popular name Luchs (Lynx).

Self-propelled guns on Panzer II chassis

The 15cm sIG 33 auf Fahrgestell Panzerkampfwagen II (Sf) mounted a 15cm sIG 33 heavy gun on a on a turretless Panzer II chassis. The prototype was mounted on an Ausf. B tank chassis, but it was quickly realized that it was not sufficient for the

mounting. A new, longer chassis incorporating an extra road wheel was designed and built, named the Fahrgestell Panzerkampfwagen II. An open-topped 15cm thick armoured superstructure sufficient against small arms and shrapnel was provided around the gun. Only twelve were built, in November and December 1941.

Another self-propelled gun built on the chassis of the Panzer II. It mounted a captured Soviet 76.2cm anti-tank gun, and was only regarded as an interim solution. The Germans soon found out that the vehicle was clearly too tall and poorly protected, in spite of having a powerful mounted weapon.

7.5cm PaK 40 auf Fahrgestell Panzerkampfwagen II (Marder II) (Sd.Kfz.131)

The 7.5cm PaK 40 was mounted on the chassis of the Ausf. F. A total of 576 of these models were built from June 1942 to June 1943. A much improved superstructure for the 7.62cm mounting was built, giving a lower profile. The Marder II became a major tank destroyer on the eastern front and saw action until the end of the war.

5cm PaK 38 auf Fahrgestell Panzerkampfwagen II

A 5cm PaK 38 was mounted on the Panzer II chassis but with limited success and as a result not many of these variants were produced.

Leichte Feldhaubitze 18 auf Fahrgestell Panzerkampfwagen II (Wespe)

Alkett designed a version mounting a 10.5cm *leichte Feldhaubitze* 18/2 field howitzer in a built-up superstructure. The Panzer II proved an efficient chassis for this weapon and it became the only widely produced self-propelled 10.5cm howitzer in the German arsenal. Between February 1943 and June 1944, a total of 676 were built by FAMO and it served on all major fronts.

Munitions Selbstfahrlafette auf Fahrgestell Panzerkampfwagen II

To support the Wespe a number of Wespe chassis were completed without mounting the howitzer and were used as ammunition carriers instead. They carried ninety rounds of ammunition. 159 of these carriers were produced, and they could be converted with the mounting of the leFH 18 in the field if required.

Limited production, experiments and prototypes

Panzer II Ausf. G (PzKpfw.IIG)

Known as the *Schachtellauferwerk*, this was a reconnaissance tank. Only twelve of these vehicles were ever built and it is not known if they ever reached active service.

Panzer II Ausf. H (Pz.Kpfw.IIH)

Only prototypes of these were ever made and the model was cancelled in September 1942.

Brückenleger auf Panzerkampfwagen II

These were built for bridge laying and served with the 7th Panzer Division in May 1940. Another vehicle was produced, designated the Panzer II Ausf. J (Pz.Kpfw.IIj) which included heavier armour. Twenty-two were produced by MAN between April and December 1942, and seven were deployed to the 12th Panzer Division on the eastern front.

Bergepanzerwagen auf Panzerkampfwagen II Ausf. J

A Panzer II recovery vehicle, for which few records can be found.

Panzer II Ausf. M (Pz.Kpfw.IIM)

The Ausf. M replaced the turret with a larger, open-topped turret mounting a 5cm KwK 39/1 gun. Four were built by MAN in August 1942, but they did not see service.

Panzerkampfwagen II ohne Aufbau

A number of chassis of these vehicles were used for engineers as personnel and equipment carriers.

Panzer Selbstfahrlafette 1C

This prototype Panzer II chassis mounted a 5cm PaK 38 gun on the chassis of the Ausf. G. Only two of these vehicles were produced, but both saw active service.

VK 1602 Leopard

The VK 1602 was intended as a 5cm KwK 39 armed replacement for the Ausf. L, with a Maybach HL157P engine driving an eight speed transmission (plus reverse). While the hull was based on that of the Pz.Kpfw.IIj, it was redesigned after the Pz.Kpfw.V Panther. However, neither of them saw service.

Panzer 38(t) Variants

Panzer 38(t) Ausf. A–C

Role: Medium tank.

Crew: 4.

Main armament: 37.2mm Škoda A7 (L/47.8) gun with 90 rounds.

Secondary armament: 2 × 7.92mm MG 37(t) machine gun with 2,550 rounds.

Armour thickness: front 25mm, side 15mm

Engine: Praga EPA Model I inline 6-cylinder, liquid-cooled, petrol

Bore: 110mm (4.331 inches)

Stroke: 136mm (5.354 inches)

Displacement: 7754.7cc (473.22 cubic inches)

Power: 91.9 kW (123.3hp, 125PS)

Transmission: 5 forward, 1 reverse

Weight: combat, 9.5 tonnes; dry, 8.5 tonnes
Power/Weight: 10 kW/metric ton (13.0 hp/short ton)

Speed: 56km/h (35mph)
Range: 200km (120 miles)

Length: 4.61 metres
Width: 2.14 metres
Height: 2.40 metres

PzKpfw.38(t) Ausf. A–D

TNH tank in German manufacture.

PzKpfw.38(t) Ausf. E–G

Pz.38(t) with frontal armour increased to 50mm by bolting on an additional 25mm armour.

PzKpfw.38(t) Ausf. S

Ninety TNH ordered by Sweden in February 1940 but seized by Germany.

Stridsvagn m/41 Series I

Swedish license-built TNH version as compensation for the seized Ausf. S tanks. A total of 116 produced.

Stridsvagn m/41 Series II

Strv m/41 with upgraded armour and stronger engine. A total of 104 produced.

Sd.Kfz.138 Marder III

Carried German 75mm gun in open-top superstructure.

Sd.Kfz.139 Marder III

Carried Soviet 76.2mm gun in open-top superstructure.

SdKfz.138/1 Grille

Carried German 150mm infantry gun; also variant which carried ammunition.

SdKfz.140 Flakpanzer 38(t)

Carried a 20mm anti-aircraft gun.

SdKfz.140/1 Aufklärungspanzer 38(t) mit 2cm KwK 38

Reconnaissance tank with 20mm turret from a Sd.Kfz.222 armoured car. A total of seventy built.

SdKfz.140/1 Aufklärungspanzer 38(t) mit 7.5cm KwK 37 L/24

75mm gun mounted in a modified superstructure. A total of two built.

Jagdpanzer 38(t)

Unofficially known as the *Hetzer*, a tank destroyer carrying a 75mm L/48 anti-tank gun.

G-13

Swiss designation for postwar-built Jagdpanzer 38(t) sold by Czechoslovakia.

Nahkampfskanone 1

Swiss-built tank destroyer, similar to Marder III, only one built.

Pansarbandvagn 301

A total of 220 Stridsvagn m/41 (Series I and II) were rebuilt to armoured personnel carriers.

Stormartillerivagn m/43

Assault gun based on the m/41 SII chassis. A total of thirty-six produced.

Panzerjäger vehicles

Panzerjäger I

4.7cm PaK on Pz.Kpfw.I chassis.

Marder I

7.5cm PaK on captured French chassis, the Lorraine 37L.

Marder II

7.5cm PaK or from captured Soviet 76.2mm gun on Pz.Kpfw.II chassis.

Later generation Jagdpanzer

Jagdpanzer 38(t) Hetzer

7.5cm PaK 39 L/48 gun/modified version 7.5cm StuK 40 L/48 mounted on the chassis of a Sturmgeschütz III/IV assault gun.

Self-propelled artillery

Providing close fire-support for infantry and acting as specialised tank destroyer.

Sturmpanzer I Bison

15cm sIG 33 howitzer on chassis of a Pz.Kpfw.I Ausf. B.

Sturmpanzer II Bison

15cm sIG 33 howitzer on chassis of a Pz.Kpfw.II

Grill

15cm sIG 33 howitzer on chassis of the Czech Pz.Kpfw.38(t).

Notes

Notes

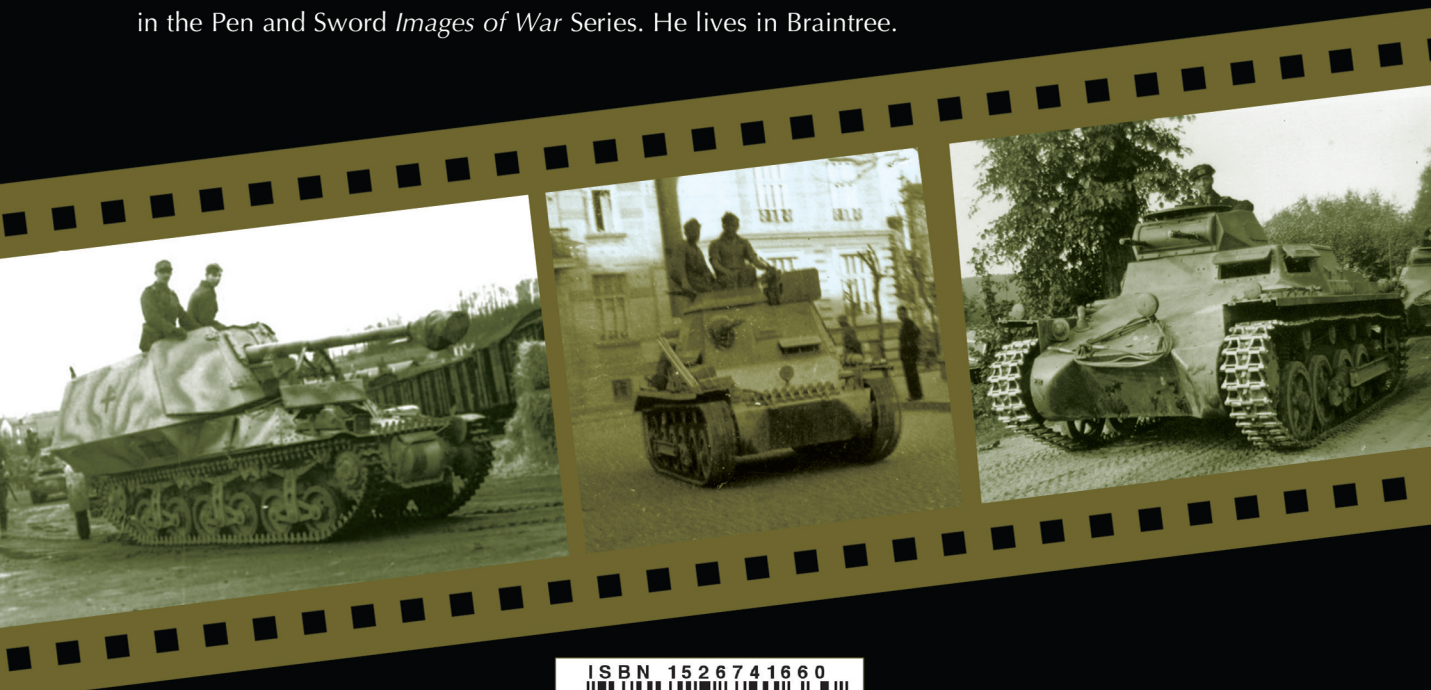
Hitler's Wehrmacht led the way in armoured warfare as the successful blitzkriegs in Poland and North West Europe in 1940 so convincingly proved. The contribution of light tanks such as Panzers I, II and 35(t) was critical.

As the war spread to the Balkans, north Africa and the invasion of Russia, German engineers worked tirelessly modifying existing light tanks and developing new models. The growing Soviet armoured threat, in particular, spawned tank destroyers such as the Marder III Panzerjäger, SdKfz 138/1 and 139. Anti-aircraft variants included the Flakpanzer 38(t) and the SdKfz 140/1 was a reconnaissance tank armed with a 20mm turret-mounted gun, developed from the SdKfz 22 armoured car, whereas the Aufklarungspanzer 38(t) carried a 7.5cm gun in the support reconnaissance role.

In the final stages of the war light tanks were phased out and the Marder and 38 (t) were up-gunned; the Wespe was adapted from the Panzer II chassis.

This superbly illustrated book gives a comprehensive overview of the multitude of fighting vehicles and variants that came into service. With the text and captions providing technical data, the images show this formidable array of fighting vehicles in action across the theatres of war.

Paul Thomas is an expert on WW2 fighting vehicles and avid collector of contemporary images. His previous books *German Halftracks At War 1939-1945*, *Panzer III at War 1939-1945*, *Panzer IV at War 1939-1945*, *Hitler's Tank Destroyers* and *German Reconnaissance and Support Vehicles* are in print in the Pen and Sword *Images of War* Series. He lives in Braintree.



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